China Hardware Innovation Camp

1st milestone – March 13 2015

1st milestone

Structure

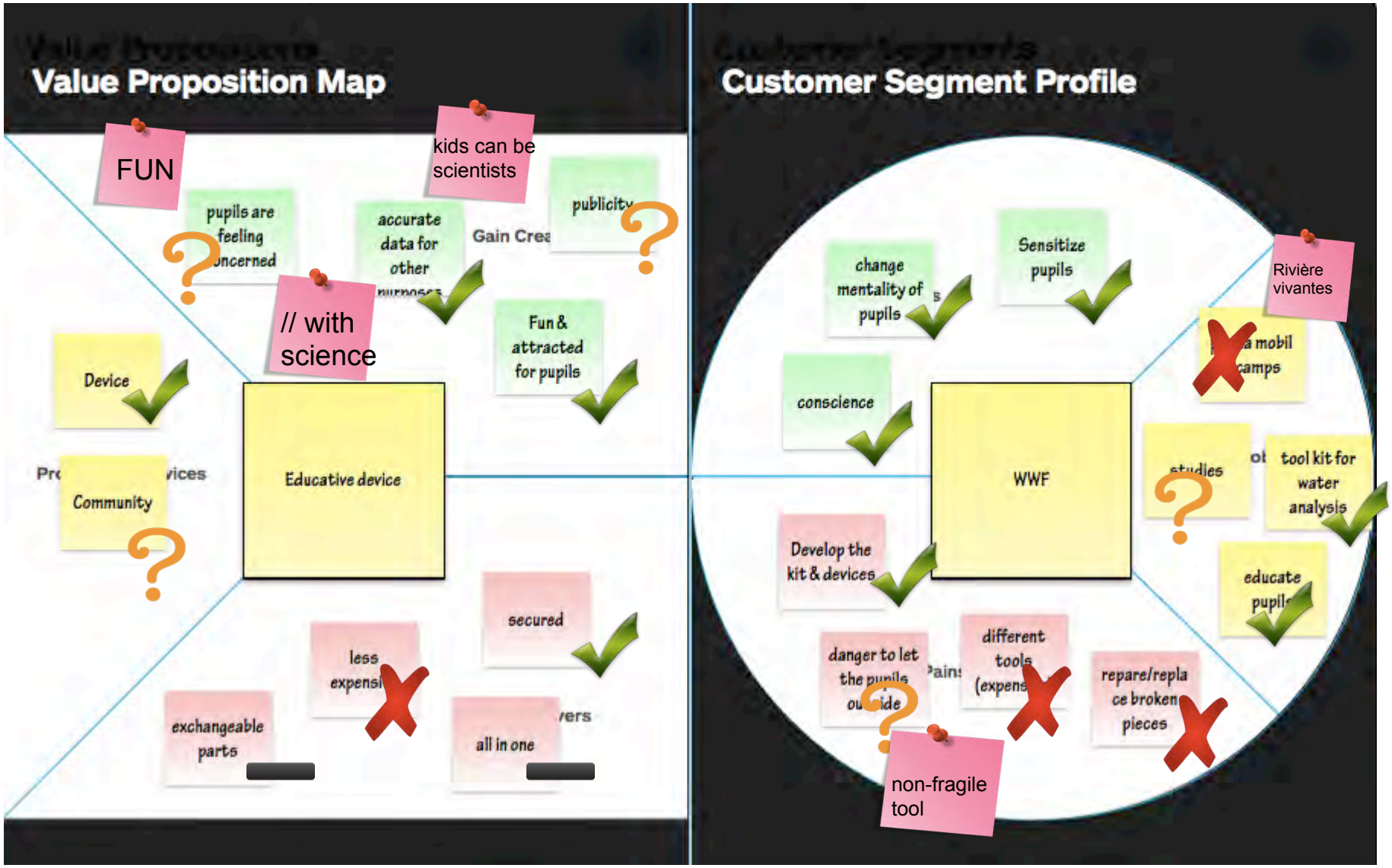
- Problem statement
- Business Model and Value Proposition Canvas
- Validation/invalidation of interviews
- Exploratory sketches
- Hardware solutions (mechanical)
- Block diagram
- Components and electronic modules
- Software solutions (libraries – API)
- Material solutions

Problem statement: ...

- Sensitize kids with environmental issues
- More and more programs in schools, camps
- Not an easy task to take the pupils outside

Business model canvas

Value proposition Canvas



Validation of interviews: ...

"It's not a fundamental need, but it would be a real plus for our activity!"

Arianne Derron, Responsable Ecole, WWF

Our next steps

Visit an activity “Rivières vivantes”

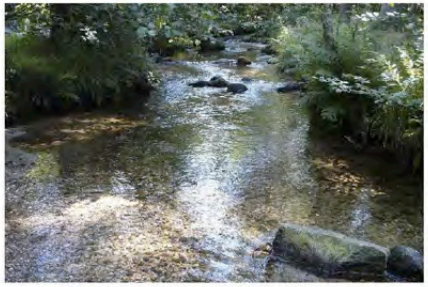
Contact “La maison de la Rivière”

Contact schools and teachers

Moodboard - Context













Moodboard - Inspiration

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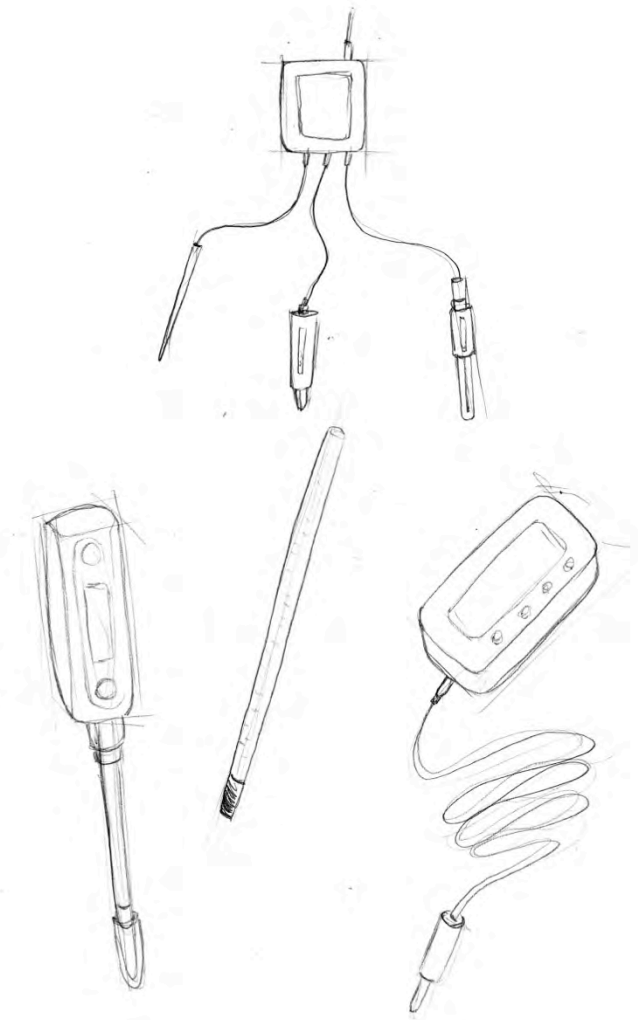
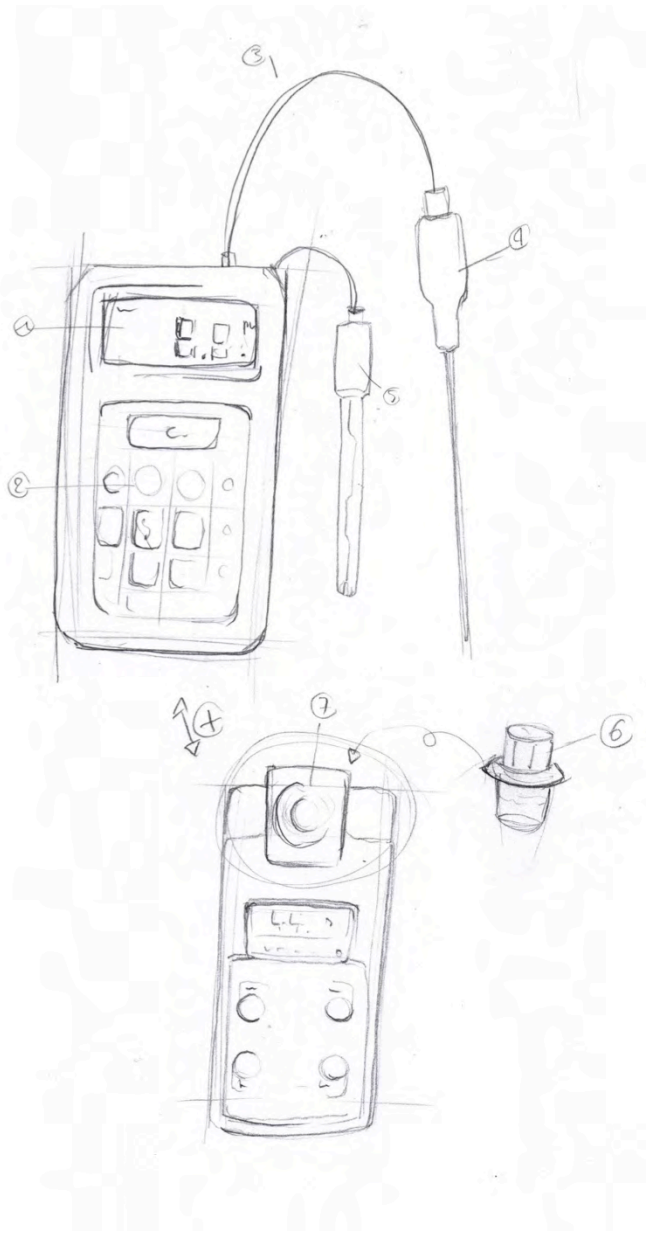
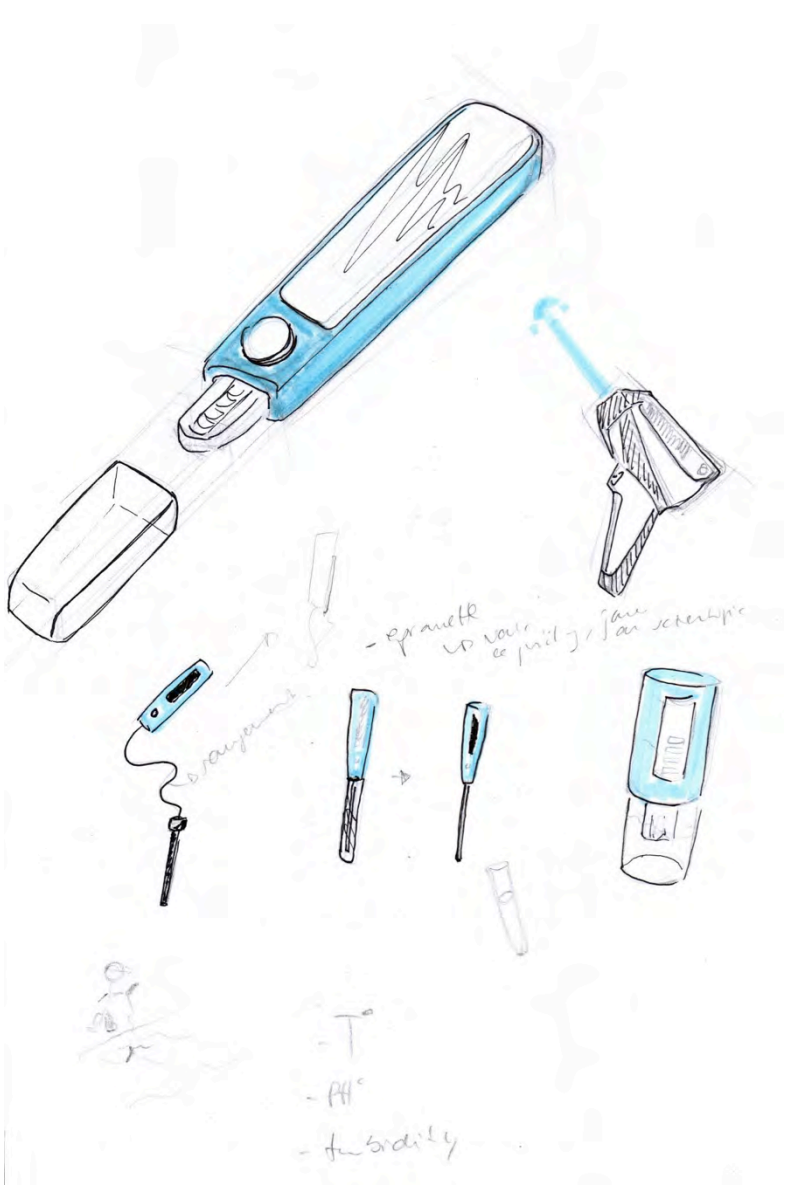
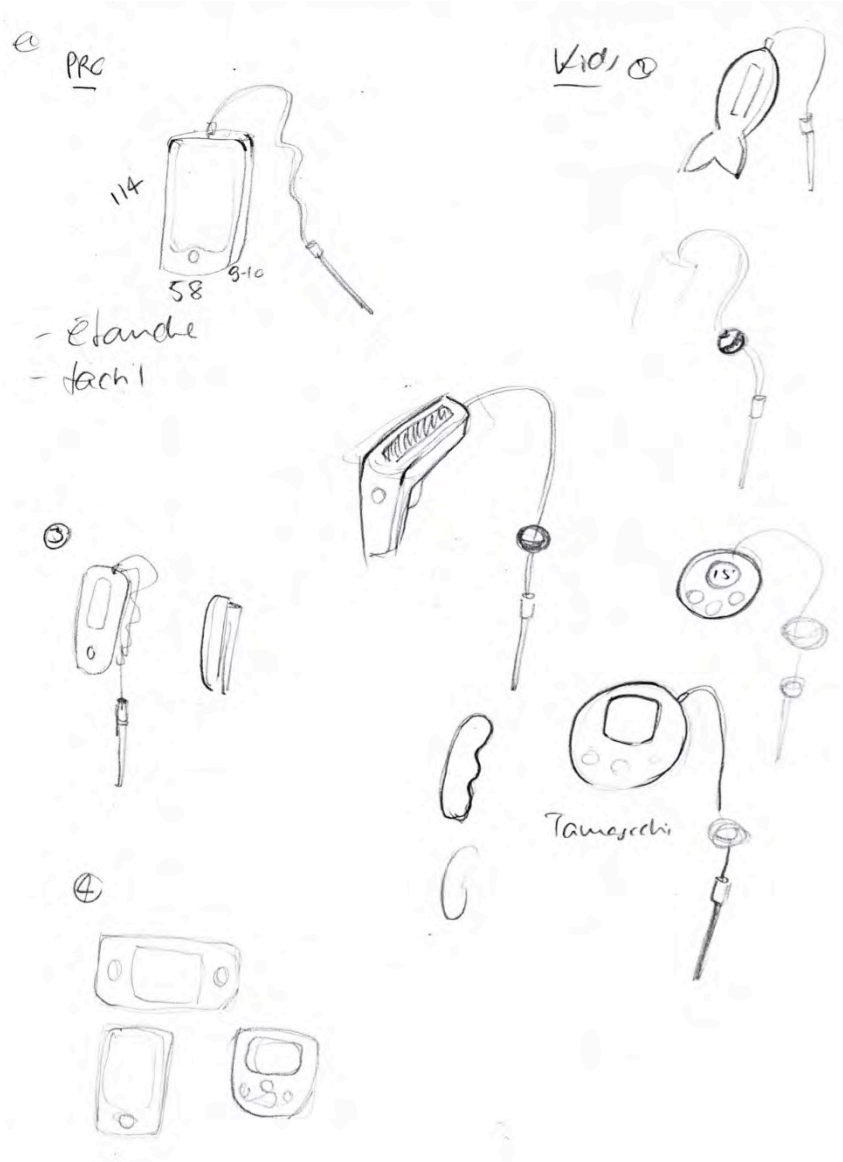
Exploratory sketches



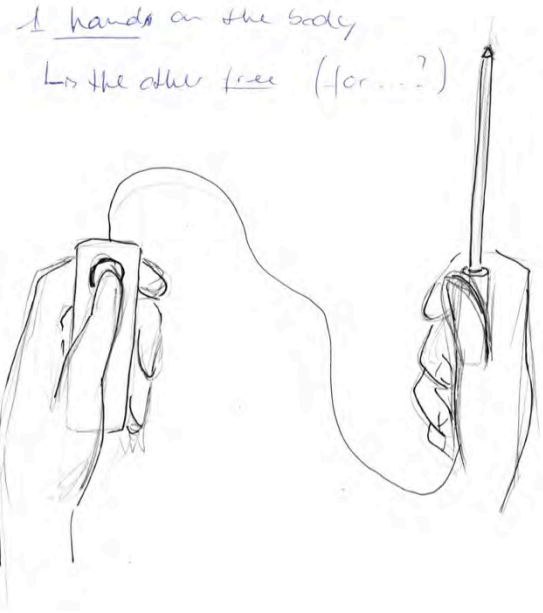


Exploratory sketches





Exploratory sketches



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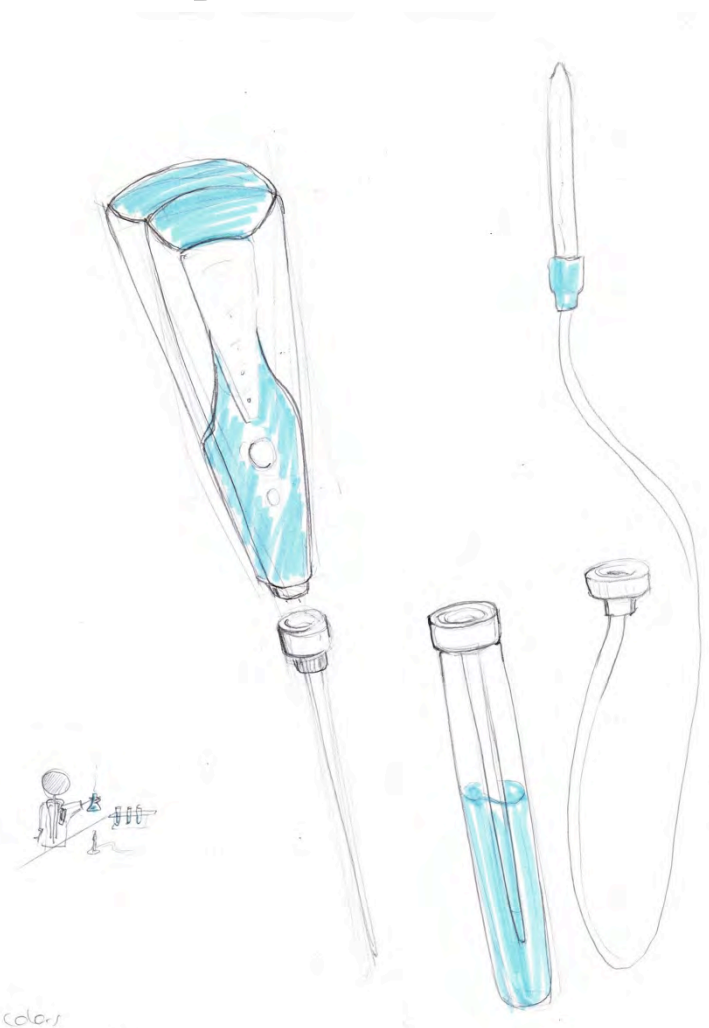

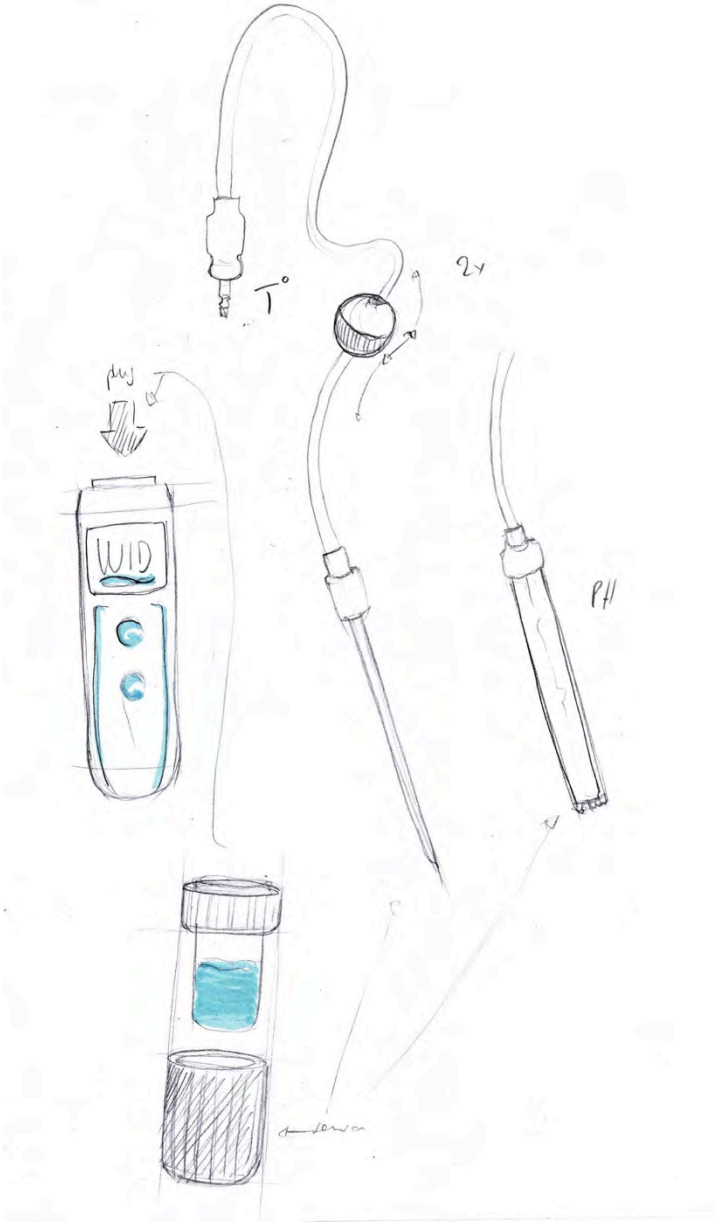

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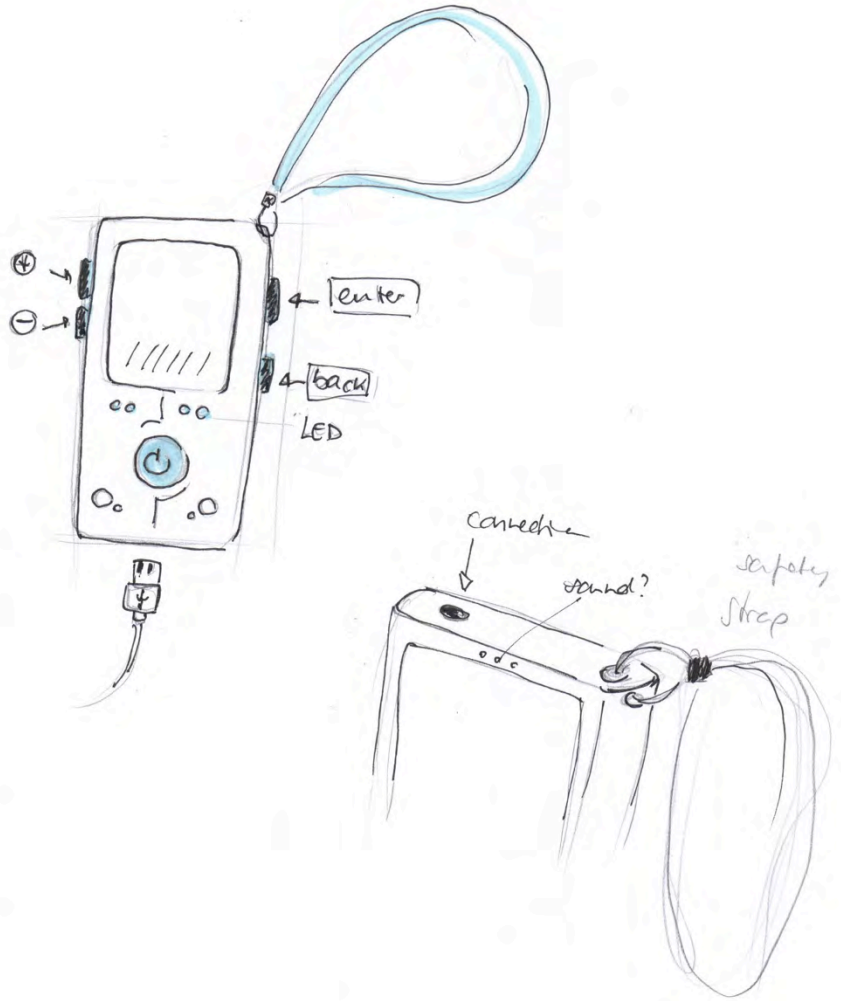
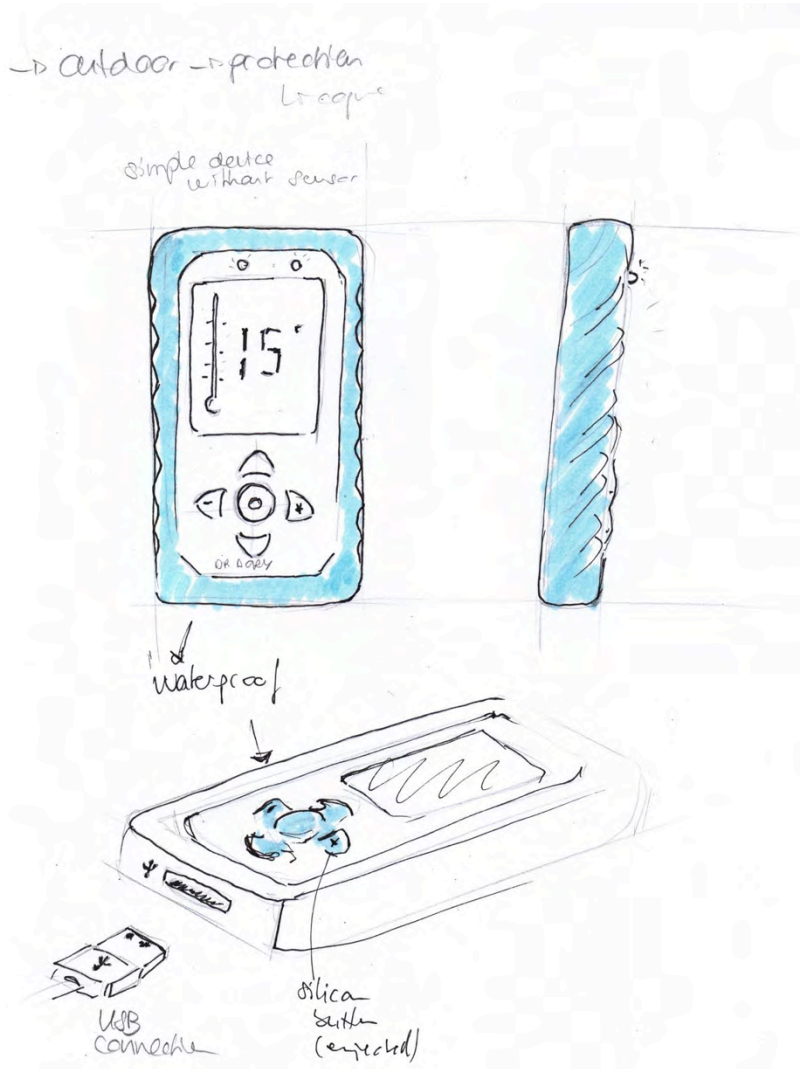
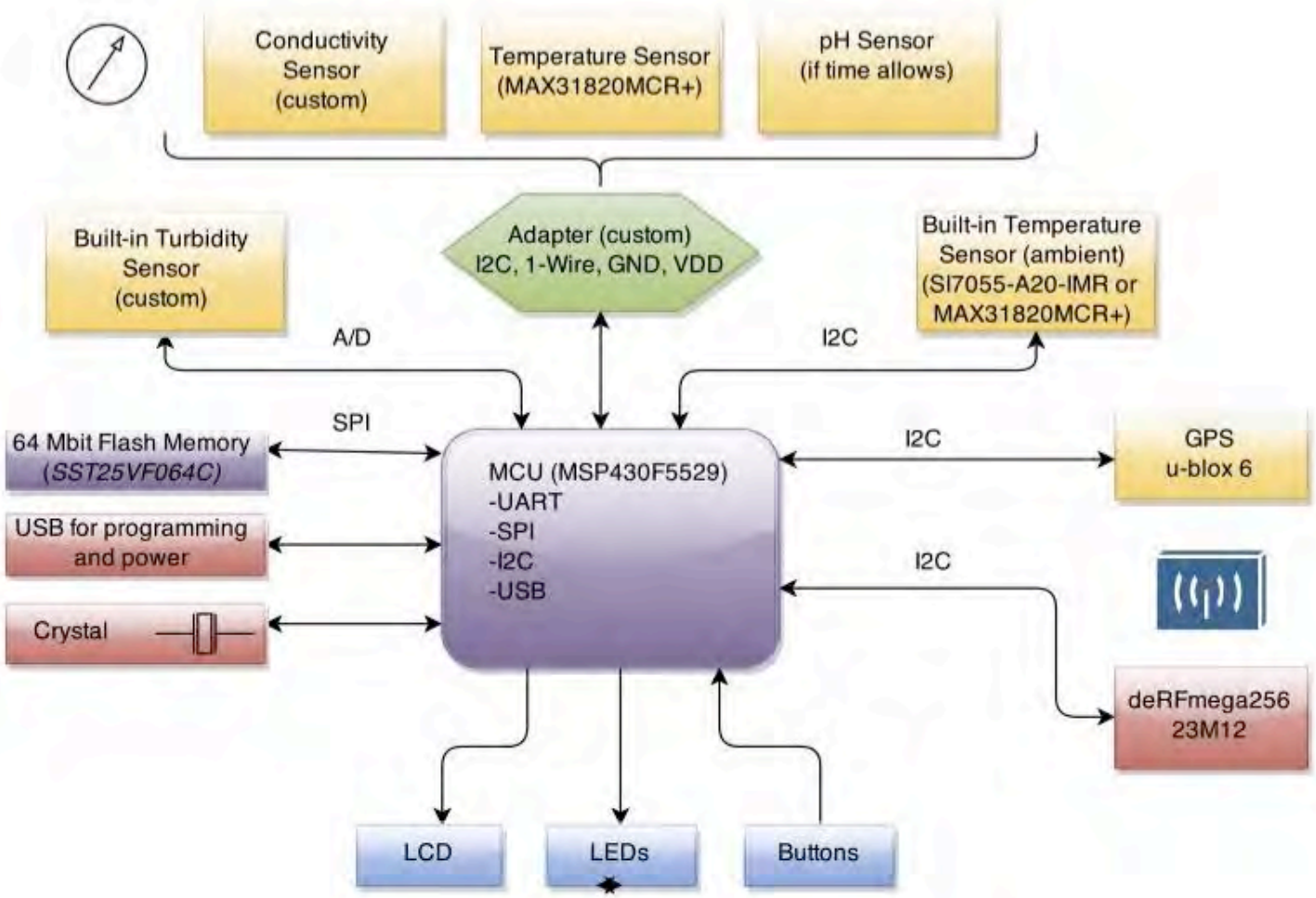




Hardware solutions

- Custom conductivity and turbidity sensor.
- Integrated digital temperature sensor (1-wire)
- Microcontroller: TI-MSP430F5529, low power! evaluation board
- OLED or e-Ink display

Block diagram



Components and electronic modules

- 6loWPAN: loT application, connected sensor network & connection to router. Not sure yet

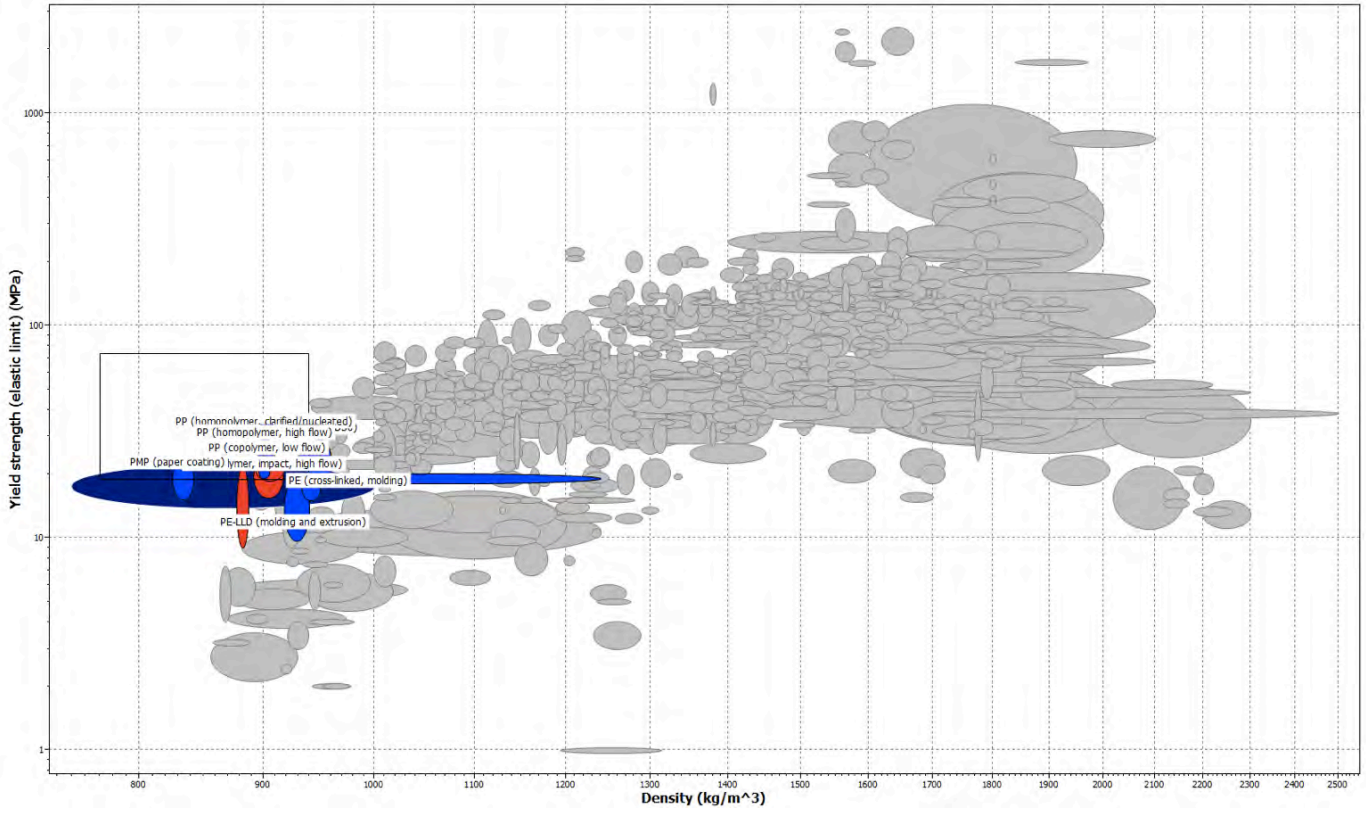
- u-blox NEO6 (or clone on seeedstudio) for GPS

Software solutions

1. Processing (Energia)
2. FreeRTOS with gcc compiler
3. C++ for computer software
4. (web interface)

Material solutions - Ouside body

- Function part: outshell of device
- Constraints: light, strength, water-proof, cheap

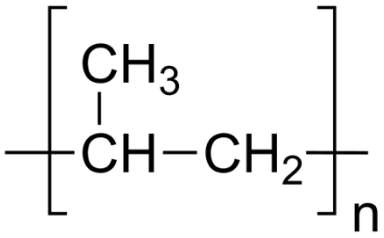


Material solutions - Outside body

-PP(polypropylene), high strength, low density, water durability, easy processing.

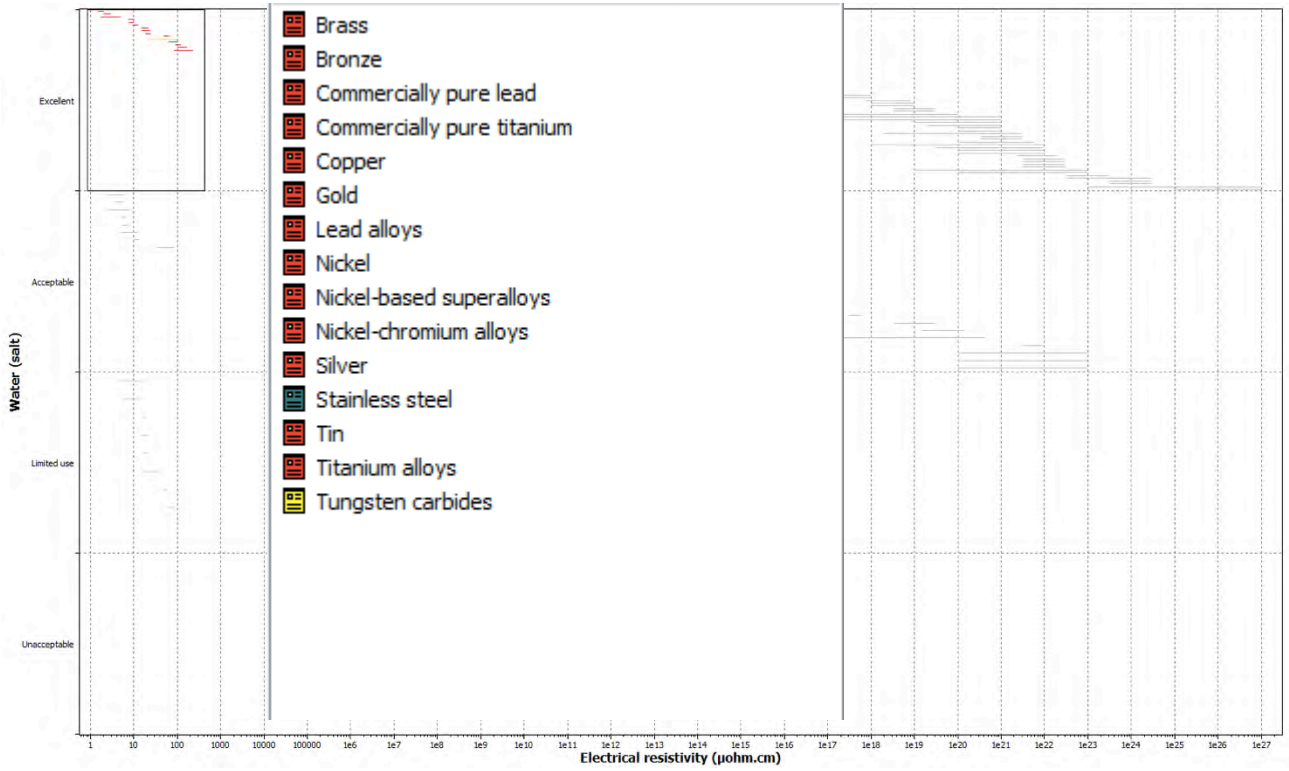
-Used in packaging, toys, containers, food applications, and so on.

- ~2CHF/kg



Material solutions - Conductivity probe

- Function part: probe of conductivity sensor
- Constraints: anticorrosive, high conductive, cheap



Material solutions - Conductivity probe

-Lead is not stiff enough,gold not necessary,Nickel and nickel-based superalloy are too good and expensive.

-Copper coated with anti-corrosion coating. CHEAP

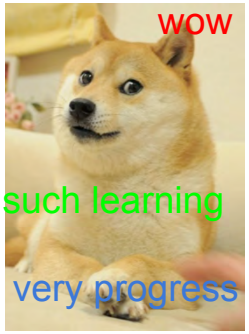
-Stainless steel: working at high temperature—above 200 degree. CHEAP ~5CHF/kg

to be continued...

The process so far...

How do you work together?

What have I learned and where I need help

	Mélanie	Noémie	Raffael	Xiadong	Ziyu
What I learned?				Keep contact with all the lovely guys.	 new things and fun
NEED HELP?			supervisor Altium libs	A solution for the new wireless device.	supervisor manufacturing


KEEP
CALM
AND
LOVE
DORY

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